FIG. 1

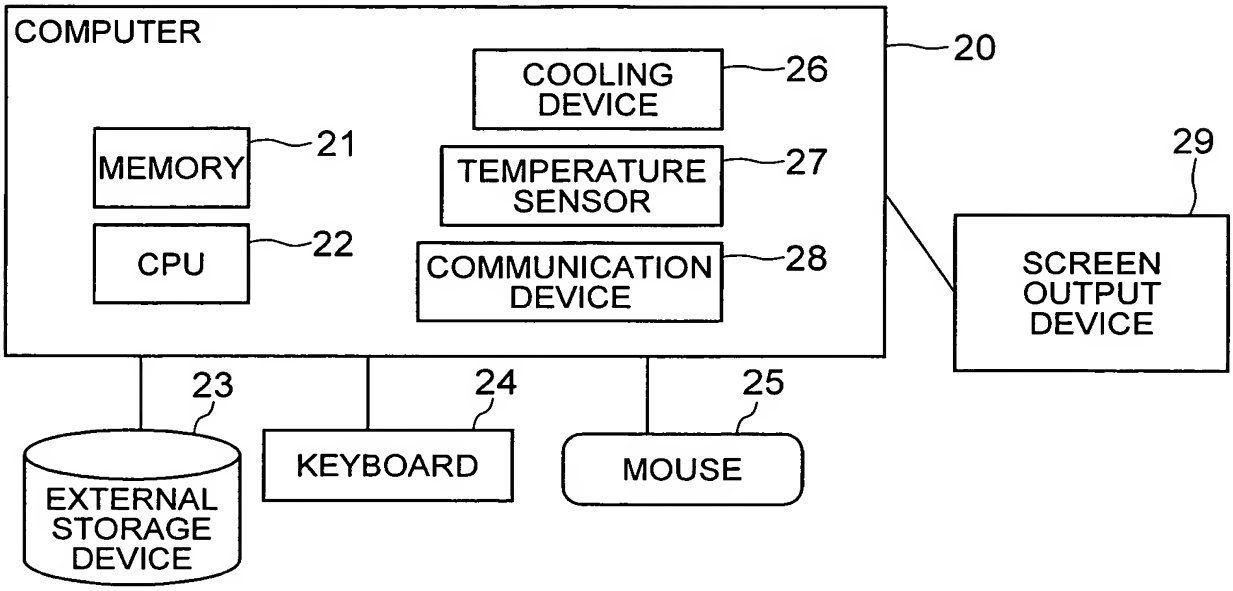

COMPUTER
20
COOLING DEVICE
26
MEMORY
21
TEMPERATURE SENSOR
27
29
CPU
22
COMMUNICATION DEVICE
28
SCREEN OUTPUT DEVICE
23
24
25
EXTERNAL STORAGE DEVICE
KEYBOARD
MOUSE

FIG. 2

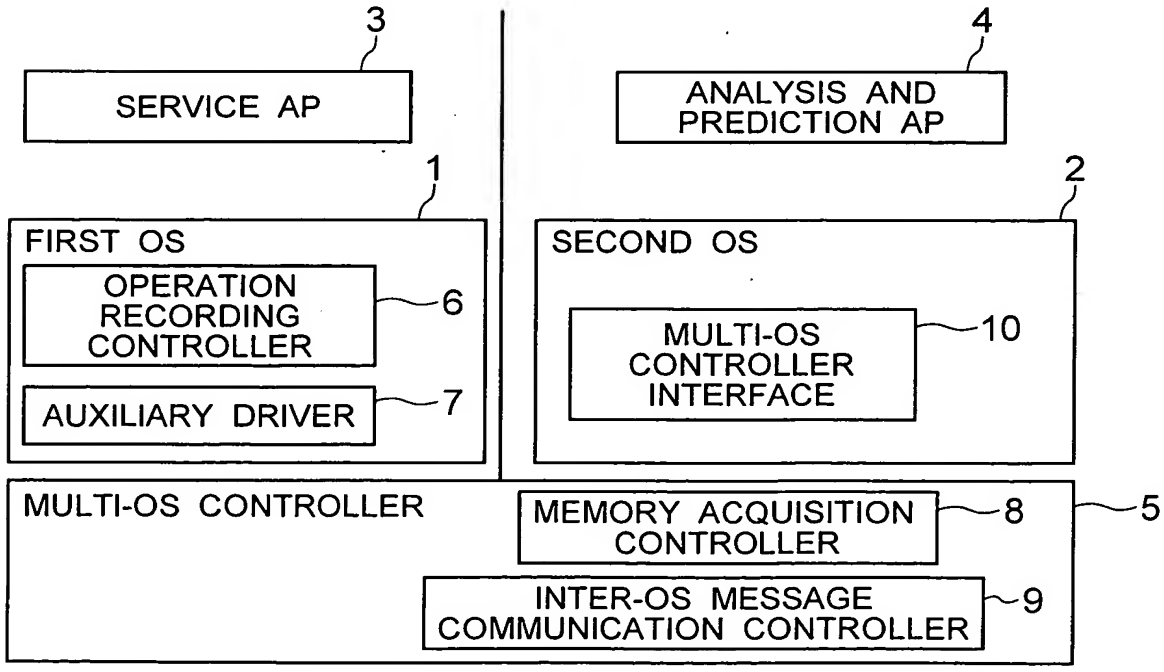

3
SERVICE AP
4
ANALYSIS AND PREDICTION AP
1
2
FIRST OS
OPERATION RECORDING CONTROLLER
6
AUXILIARY DRIVER
7
SECOND OS
MULTI-OS CONTROLLER INTERFACE
10
MULTI-OS CONTROLLER
MEMORY ACQUISITION CONTROLLER
8
5
INTER-OS MESSAGE COMMUNICATION CONTROLLER
9

FIG. 3

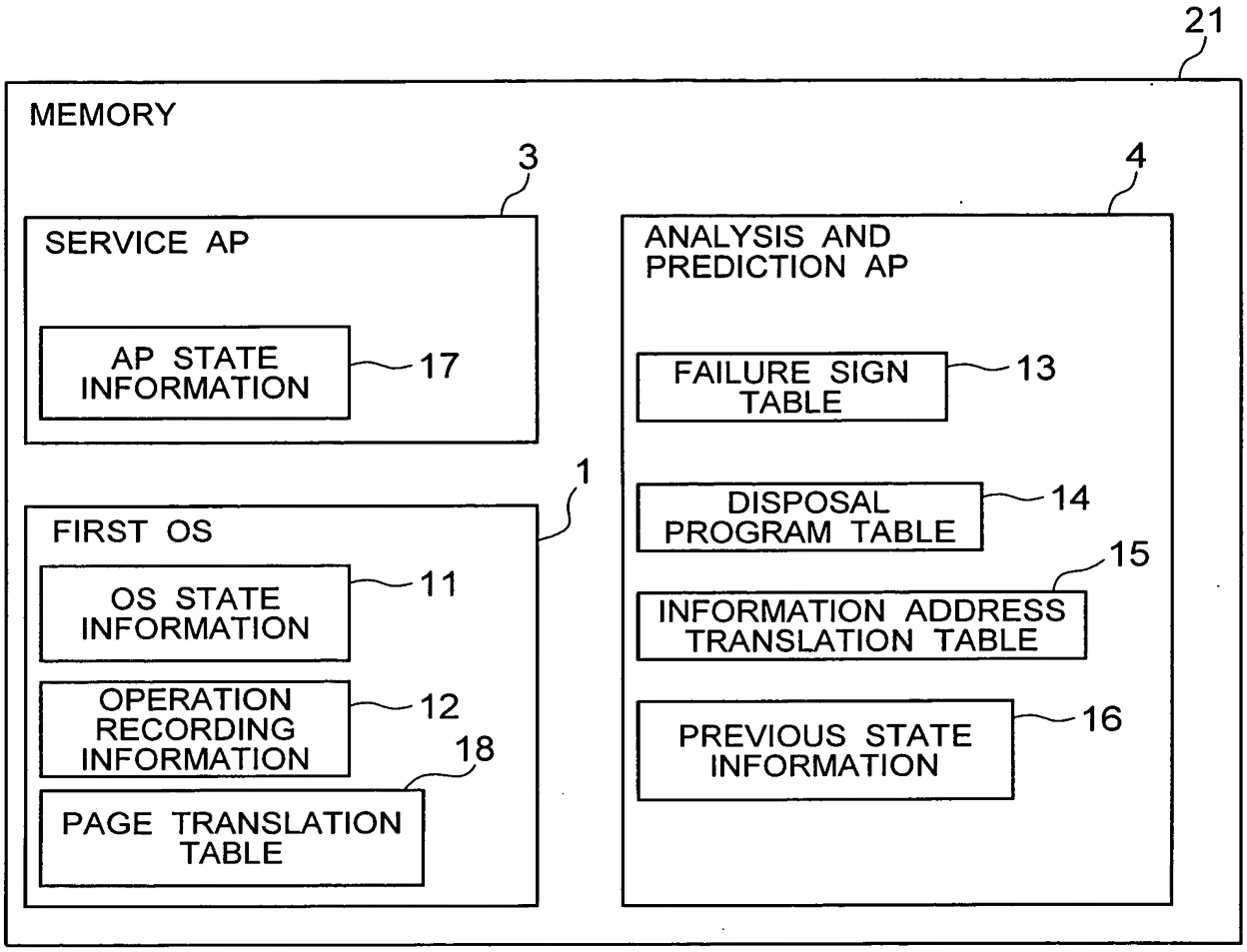

21
MEMORY
3
SERVICE AP
AP STATE INFORMATION
17
1
FIRST OS
OS STATE INFORMATION
11
OPERATION RECORDING INFORMATION
12
18
PAGE TRANSLATION TABLE
4
ANALYSIS AND PREDICTION AP
FAILURE SIGN TABLE
13
DISPOSAL PROGRAM TABLE
14
15
INFORMATION ADDRESS TRANSLATION TABLE
PREVIOUS STATE INFORMATION
16

FIG. 4

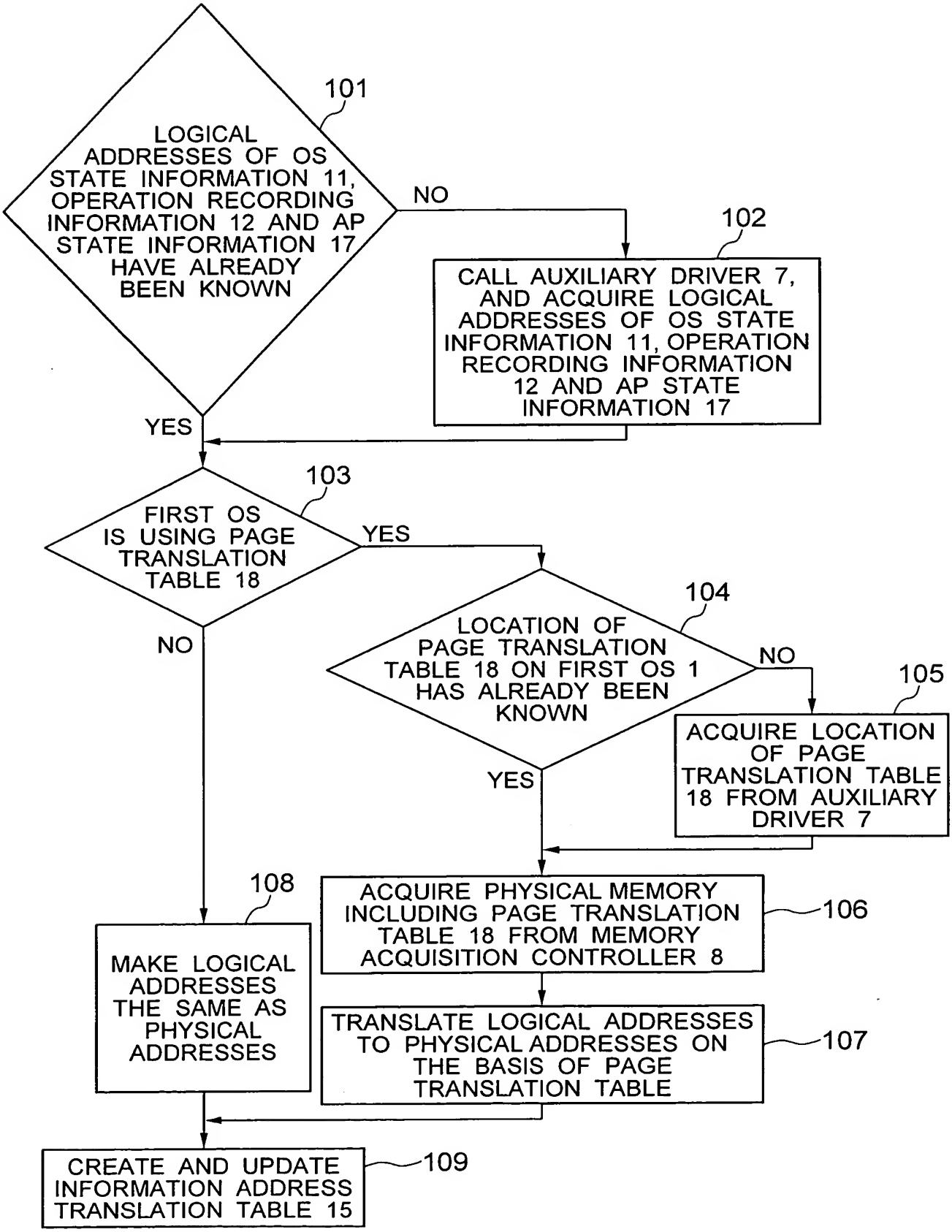

101
LOGICAL ADDRESSES OF OS STATE INFORMATION 11, OPERATION RECORDING INFORMATION 12 AND AP STATE INFORMATION 17 HAVE ALREADY BEEN KNOWN
NO
102
CALL AUXILIARY DRIVER 7, AND ACQUIRE LOGICAL ADDRESSES OF OS STATE INFORMATION 11, OPERATION RECORDING INFORMATION 12 AND AP STATE INFORMATION 17
YES
103
FIRST OS IS USING PAGE TRANSLATION TABLE 18
YES
NO
104
LOCATION OF PAGE TRANSLATION TABLE 18 ON FIRST OS 1 HAS ALREADY BEEN KNOWN
NO
105
ACQUIRE LOCATION OF PAGE TRANSLATION TABLE 18 FROM AUXILIARY DRIVER 7
YES
108
MAKE LOGICAL ADDRESSES THE SAME AS PHYSICAL ADDRESSES
ACQUIRE PHYSICAL MEMORY INCLUDING PAGE TRANSLATION TABLE 18 FROM MEMORY ACQUISITION CONTROLLER 8
106
TRANSLATE LOGICAL ADDRESSES TO PHYSICAL ADDRESSES ON THE BASIS OF PAGE TRANSLATION TABLE
107
CREATE AND UPDATE INFORMATION ADDRESS TRANSLATION TABLE 15
109

FIG. 5

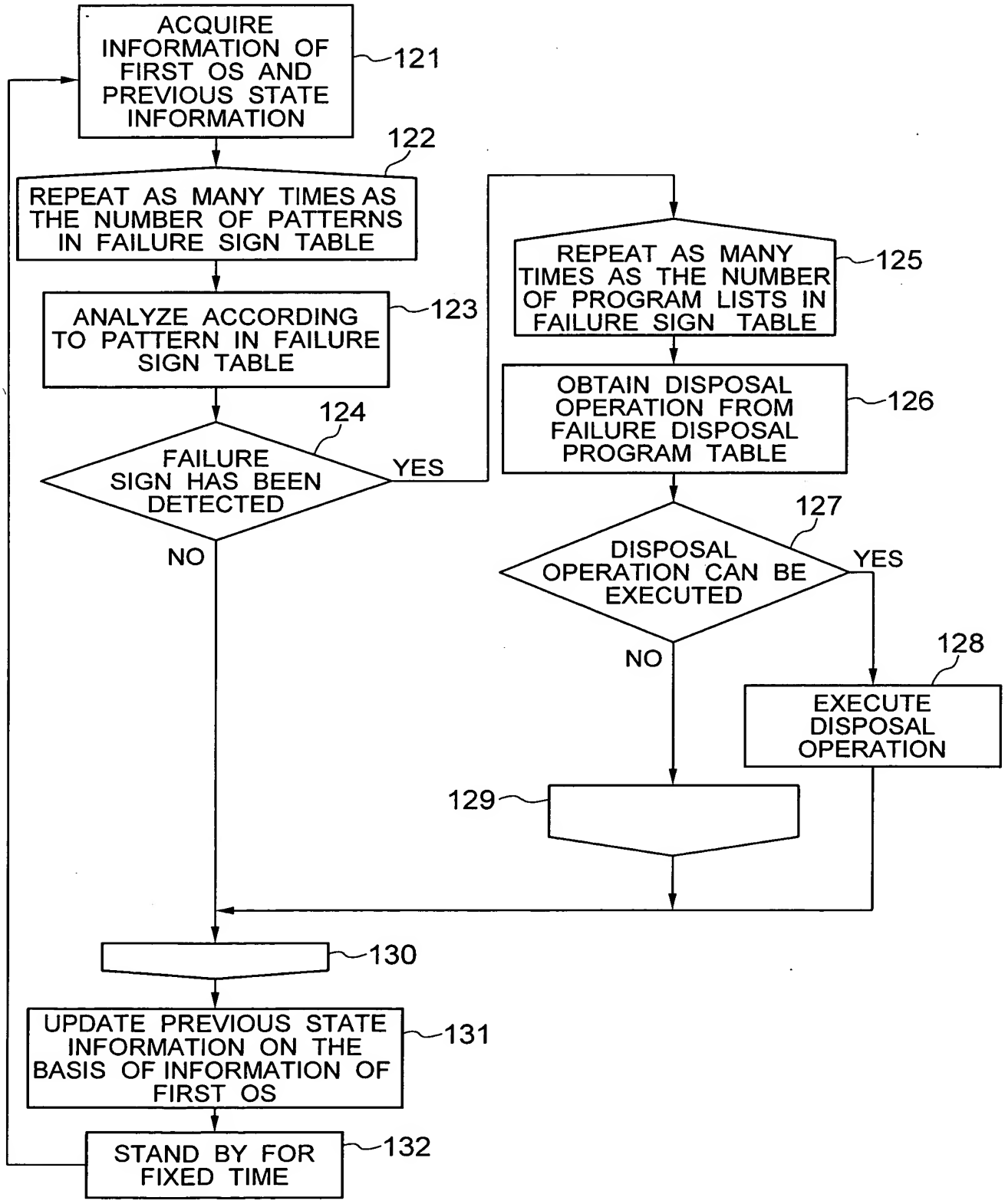

ACQUIRE INFORMATION OF FIRST OS AND PREVIOUS STATE INFORMATION
121
REPEAT AS MANY TIMES AS THE NUMBER OF PATTERNS IN FAILURE SIGN TABLE
122
ANALYZE ACCORDING TO PATTERN IN FAILURE SIGN TABLE
123
FAILURE SIGN HAS BEEN DETECTED
124
YES
NO
REPEAT AS MANY TIMES AS THE NUMBER OF PROGRAM LISTS IN FAILURE SIGN TABLE
125
OBTAIN DISPOSAL OPERATION FROM FAILURE DISPOSAL PROGRAM TABLE
126
DISPOSAL OPERATION CAN BE EXECUTED
127
YES
NO
EXECUTE DISPOSAL OPERATION
128
129
130
UPDATE PREVIOUS STATE INFORMATION ON THE BASIS OF INFORMATION OF FIRST OS
131
STAND BY FOR FIXED TIME
132

FIG. 6

13

SIGN NUMBER	FAILURE SIGN PATTERN	DISPOSAL PROGRAM LIST		
1	OPERATION RECORD IS INTERRUPTED	1	4	
2	ABNORMALITY OCCURS FROM DEVICE	2	3	
3	INTERRUPTS OCCUR FREQUENTLY	1	2	4
4	EXECUTION OF SERVICE AP STAGNATES	4		
...	...	...		

FIG. 7

14

PROGRAM NUMBER	DISPOSAL OPERATION	
0	RE-START SERVICE AP	1400
1	RAISE EXECUTION PRIORITY OF SERVICE AP	1401
2	STOP USE OF SUBJECT DEVICE	1402
3	RE-START APPLICATION	1403
4	PROHIBIT ACCESS TO PERIPHERAL DEVICE	1404
5	LOWER OPERATION FREQUENCY OF CPU	1405
6	EXECUTE TEMPORARY STOP INSTRUCTION ON CPU	1406
7	RE-START FIRST OS	1407
...	...	

FIG. 8

15

INFORMATION	LOGICAL ADDRESS	PHYSICAL ADDRESS
KERNEL PAGE DIRECTORY	0xC0010000	0x00010000
KERNEL PAGE TABLE	0xC0010200	0x00010200
...	...	...

FIG. 9

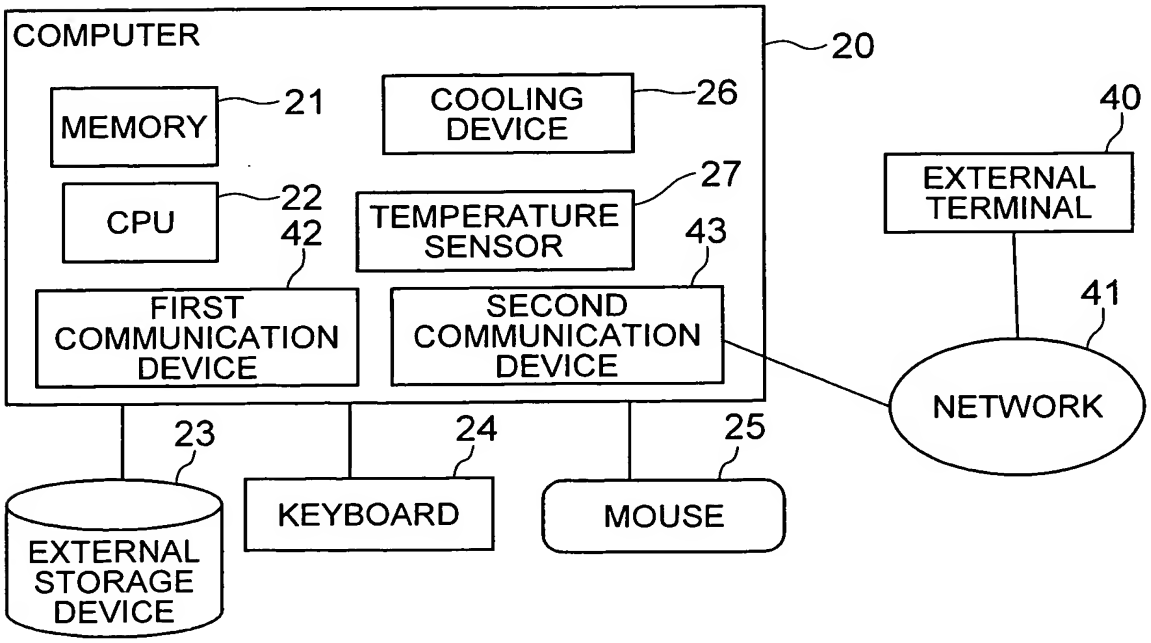


FIG. 10

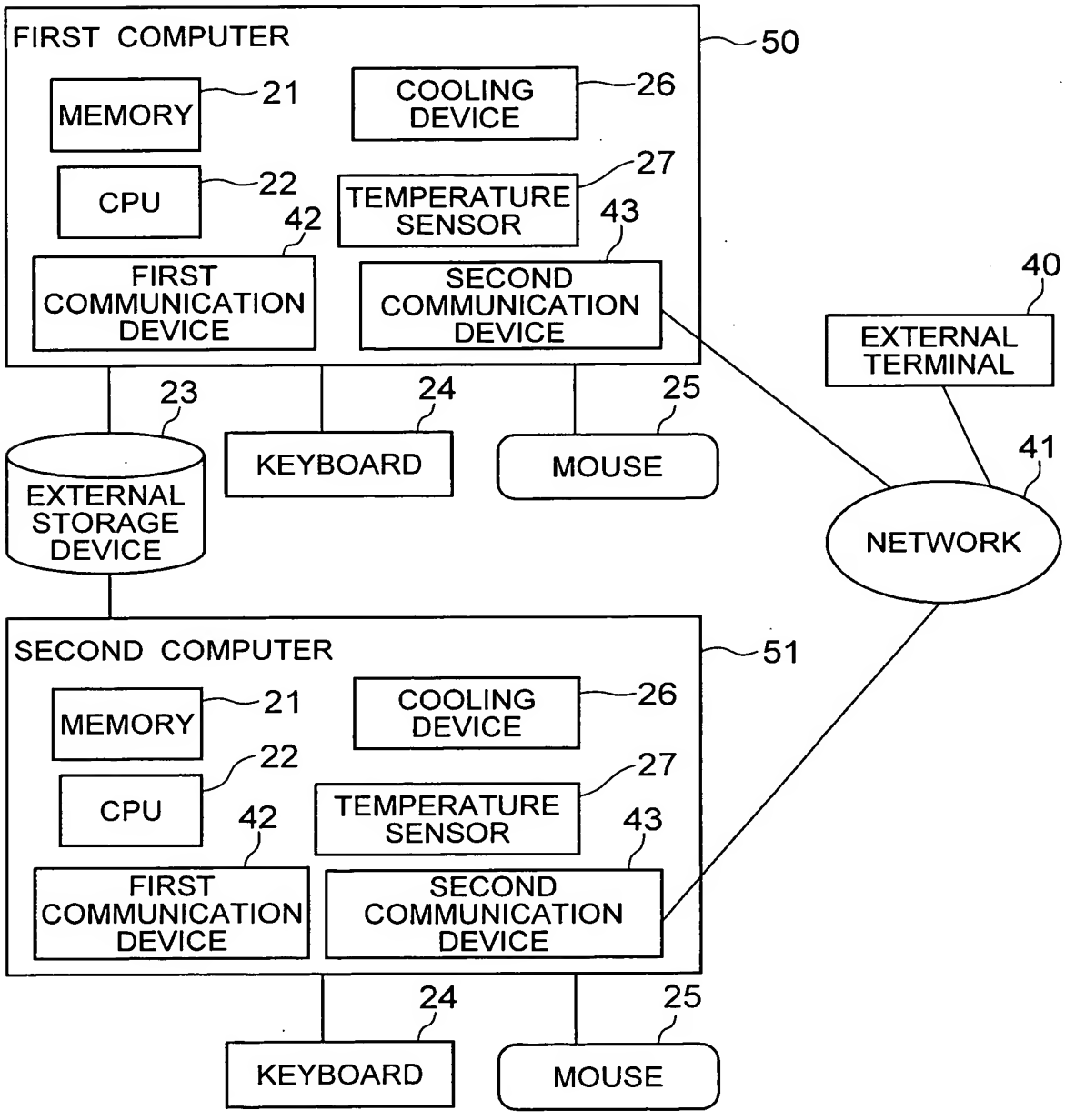

FIRST COMPUTER
50
MEMORY
21
COOLING DEVICE
26
CPU
22
TEMPERATURE SENSOR
27
42
43
FIRST COMMUNICATION DEVICE
SECOND COMMUNICATION DEVICE
40
EXTERNAL TERMINAL
23
24
25
EXTERNAL STORAGE DEVICE
KEYBOARD
MOUSE
41
NETWORK
SECOND COMPUTER
51
MEMORY
21
COOLING DEVICE
26
22
CPU
TEMPERATURE SENSOR
27
42
43
FIRST COMMUNICATION DEVICE
SECOND COMMUNICATION DEVICE
24
25
KEYBOARD
MOUSE

FIG. 11

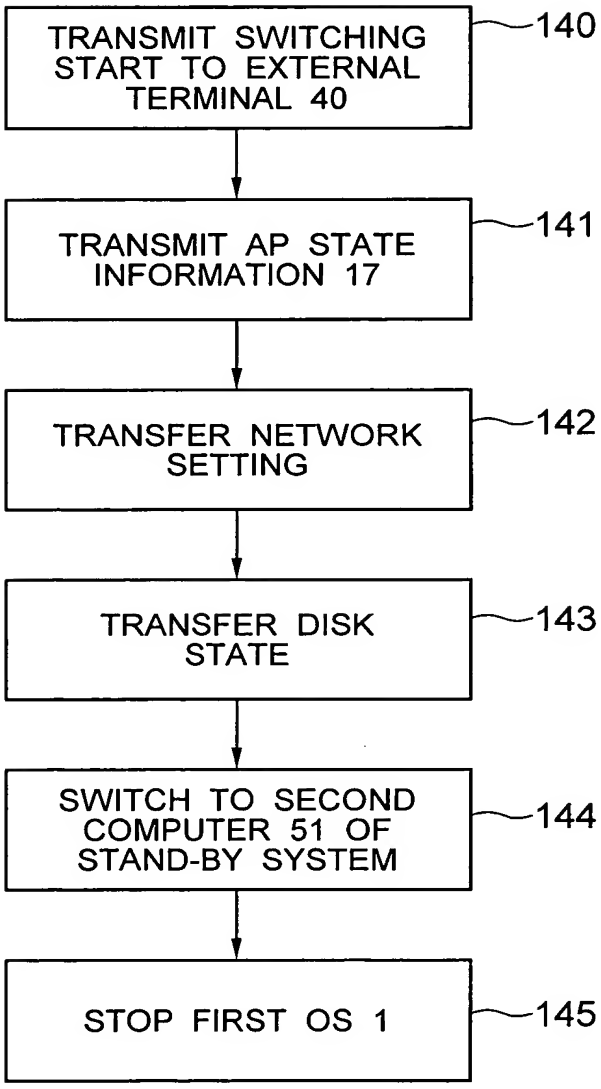

TRANSMIT SWITCHING START TO EXTERNAL TERMINAL 40
140
TRANSMIT AP STATE INFORMATION 17
141
TRANSFER NETWORK SETTING
142
TRANSFER DISK STATE
143
SWITCH TO SECOND COMPUTER 51 OF STAND-BY SYSTEM
144
STOP FIRST OS 1
145

FIG. 12

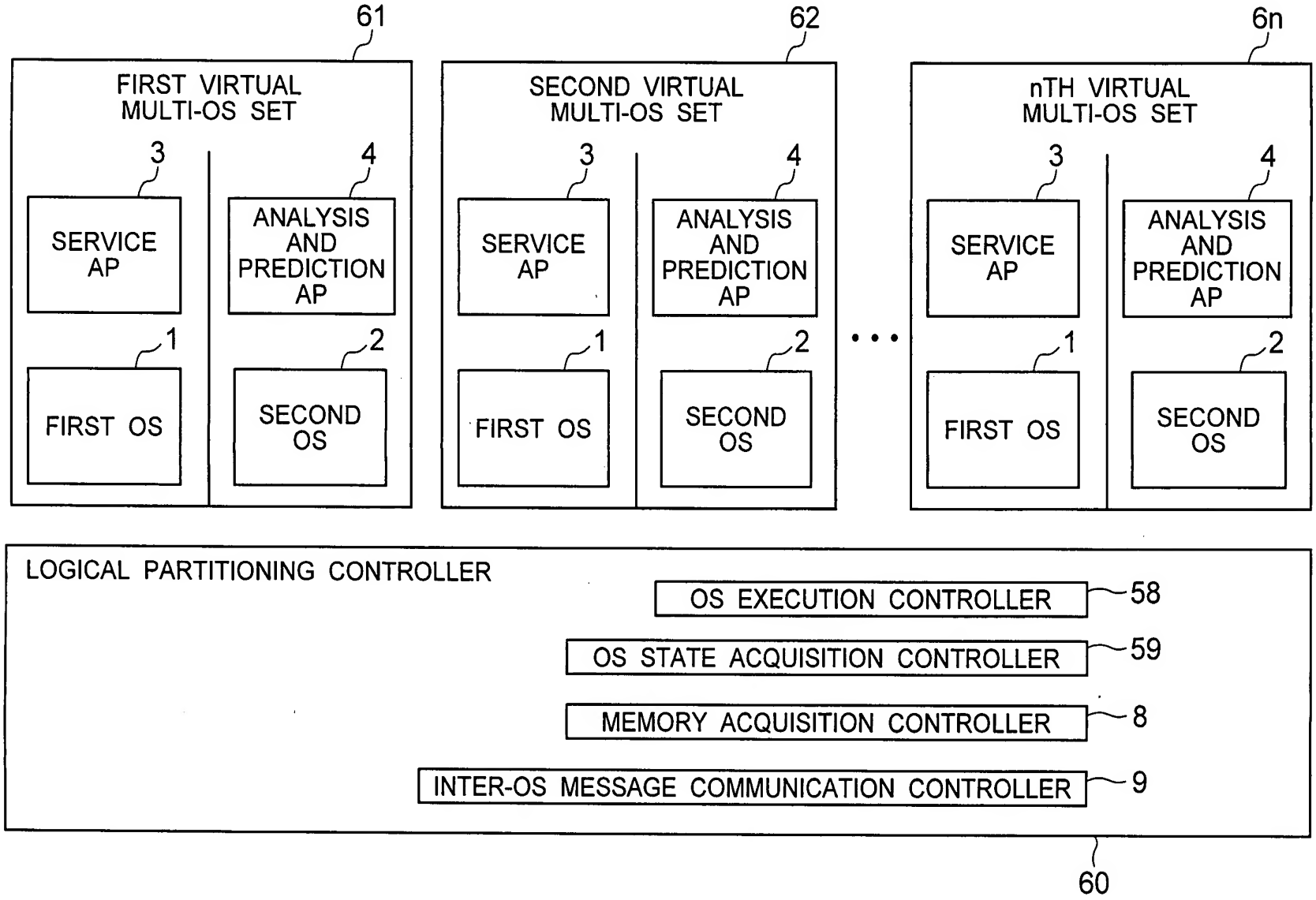

61
62
6n
FIRST VIRTUAL MULTI-OS SET
SECOND VIRTUAL MULTI-OS SET
nTH VIRTUAL MULTI-OS SET
3
4
SERVICE AP
ANALYSIS AND PREDICTION AP
1
2
FIRST OS
SECOND OS
LOGICAL PARTITIONING CONTROLLER
OS EXECUTION CONTROLLER
58
OS STATE ACQUISITION CONTROLLER
59
MEMORY ACQUISITION CONTROLLER
8
INTER-OS MESSAGE COMMUNICATION CONTROLLER
9
60

FIG. 13

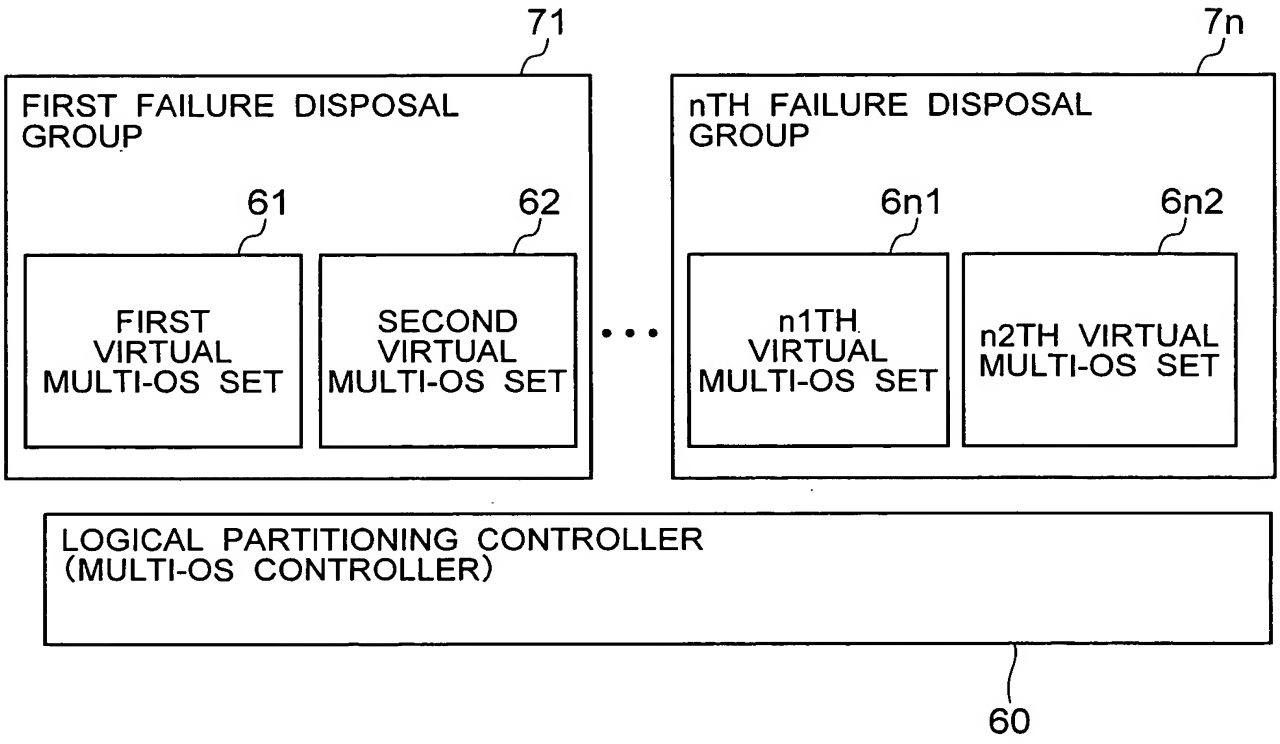

71
7n
FIRST FAILURE DISPOSAL GROUP
nTH FAILURE DISPOSAL GROUP
61
62
6n1
6n2
FIRST VIRTUAL MULTI-OS SET
SECOND VIRTUAL MULTI-OS SET
n1TH VIRTUAL MULTI-OS SET
n2TH VIRTUAL MULTI-OS SET
LOGICAL PARTITIONING CONTROLLER (MULTI-OS CONTROLLER)
60

FIG. 14

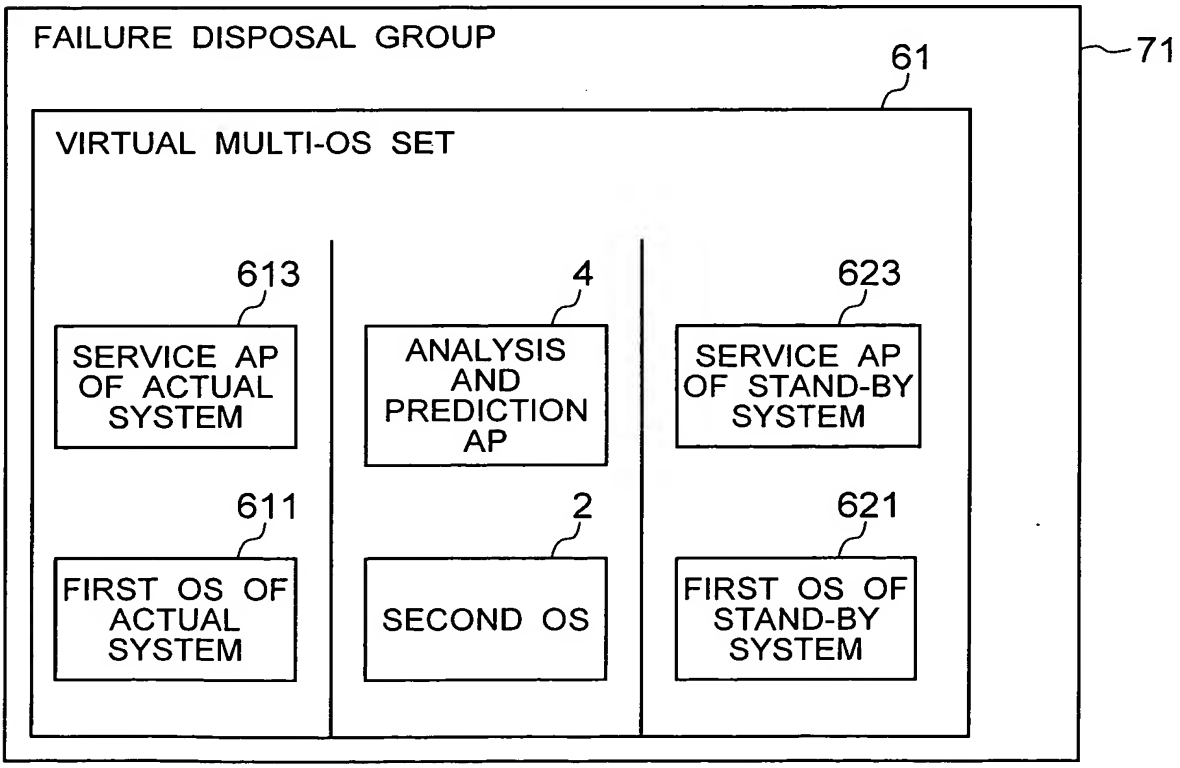

FAILURE DISPOSAL GROUP
71
61
VIRTUAL MULTI-OS SET
613
4
623
SERVICE AP OF ACTUAL SYSTEM
ANALYSIS AND PREDICTION AP
SERVICE AP OF STAND-BY SYSTEM
611
2
621
FIRST OS OF ACTUAL SYSTEM
SECOND OS
FIRST OS OF STAND-BY SYSTEM

FIG. 15

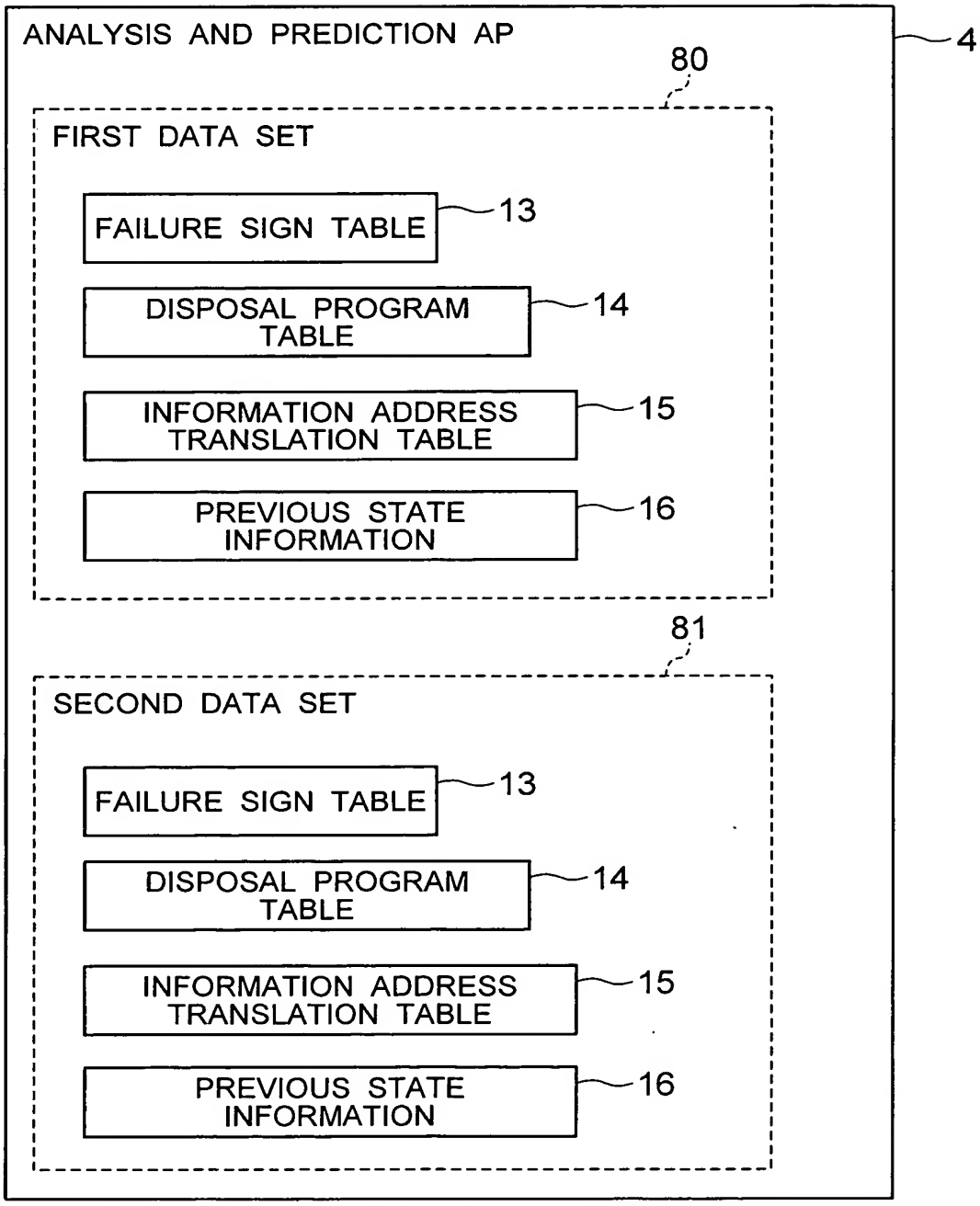
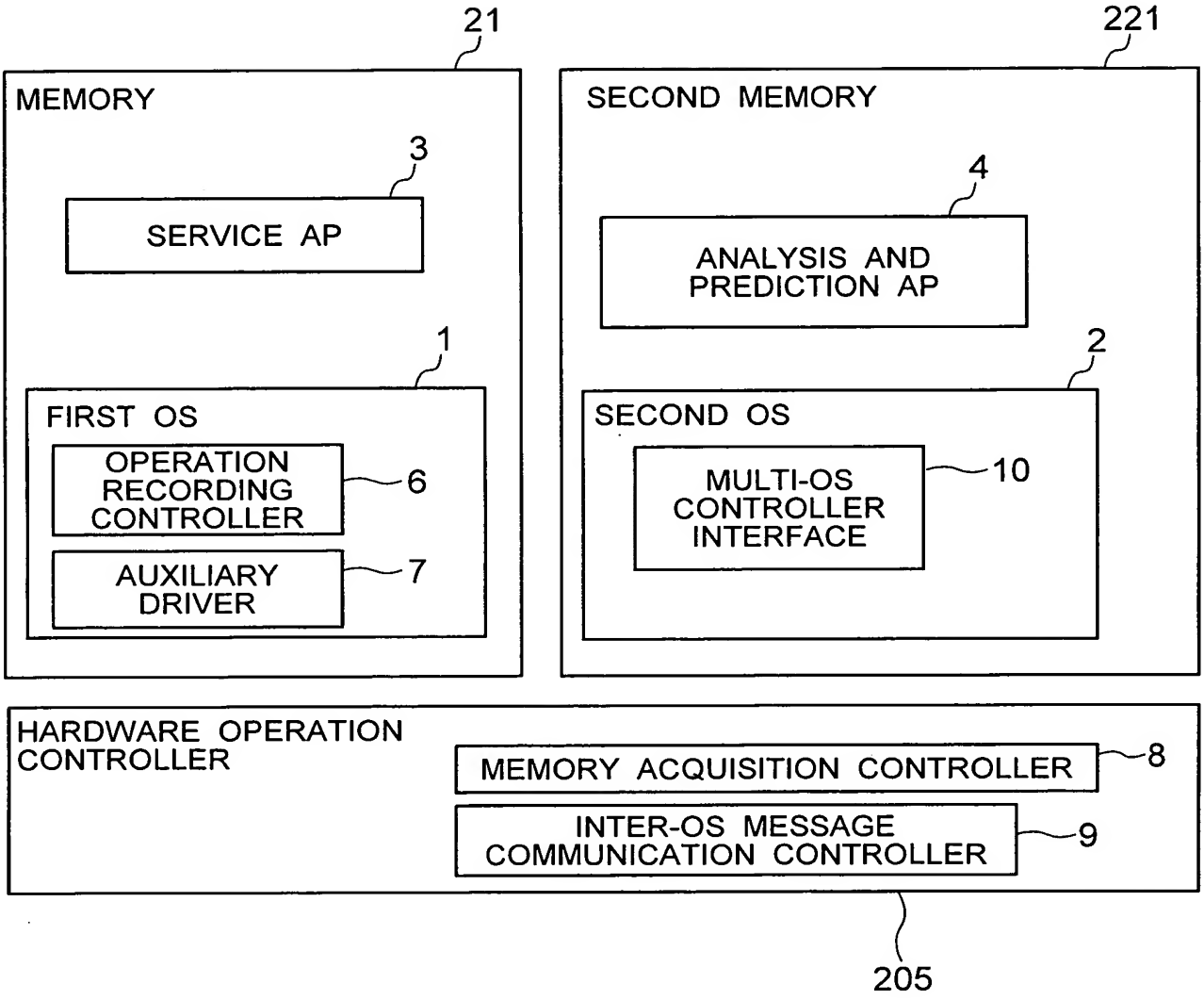

ANALYSIS AND PREDICTION AP
4
80
FIRST DATA SET
FAILURE SIGN TABLE
13
DISPOSAL PROGRAM TABLE
14
INFORMATION ADDRESS TRANSLATION TABLE
15
PREVIOUS STATE INFORMATION
16
81
SECOND DATA SET
FAILURE SIGN TABLE
13
DISPOSAL PROGRAM TABLE
14
INFORMATION ADDRESS TRANSLATION TABLE
15
PREVIOUS STATE INFORMATION
16

FIG. 16


21
MEMORY
3
SERVICE AP
1
FIRST OS
OPERATION RECORDING CONTROLLER
6
AUXILIARY DRIVER
7
221
SECOND MEMORY
4
ANALYSIS AND PREDICTION AP
2
SECOND OS
MULTI-OS CONTROLLER INTERFACE
10
HARDWARE OPERATION CONTROLLER
MEMORY ACQUISITION CONTROLLER
8
INTER-OS MESSAGE COMMUNICATION CONTROLLER
9
205